REMARKS/ARGUMENTS

Pursuant to a restriction requirement, only claims 25-28 are presently under consideration. Applicants hereby cancel claims 1-24 drawn to non-elected subject matter without prejudice to or disclaimer of the subject matter thereof. Applicants note that new claims 29-31 are added herein to further define certain aspects of the invention.

The present invention claimed is a process for demetallizing a dual-sided metallized web to create a singular functional feature for a product unit. The functional feature is formed by the common function of a first part of the feature formed on one side of the web and a second part of the feature formed on the opposite side of the web. For example, a singular functional feature may be a trace or coil winding for a planar speaker formed of two traces in registration with each other on opposite sides of a web. The two traces together form the singular functional feature. Current can be driven in the same direction through each trace, effectively doubling the current carrying capacity as compared to a single trace of the same thickness as each trace individually. In this manner, greater effective current results in a greater magnetic field and greater speaker response. Furthermore, the fact that each trace is separately not as thick as if a single thick trace were formed (i.e., the same thickness as the two traces described), over-etching problems that would arise when attempting to create a single thicker trace are minimized, thereby allowing more trace loops to be packed closer together, and achieving greater fidelity in the desired component design.

The Office action first rejects claims 25, 26, and 28 pursuant to 35 U.S.C. § 102 as anticipated by British patent application no. 840,542 by Graham et al. Graham et al. discloses the manufacture of a metallized web for use in forming roll capacitors. The web may be metallized on one or both sides. Graham et al. describes a need to demetallize the "edge margin or margins in order to prevent short-circuiting between different metal layers over the edges of the strip," (p. 1, col. 1, ll. 29-31) the strip being the web carrying the metal. Alternatively, Graham et al. suggest that "a narrow deviating metal-free band" (p. 1, col. 1, l. 35-36) may be provided along the strip to provide "two electrodes on one surface" (p. 1, col. 1, l. 37). Notably, Graham et al. does not recognize or suggest creating a singular functional feature by etching a dual-sided metal web. Graham et al. does not disclose the application of a resist layer on each side of a web to form two patterns substantially defining first and second parts of the singular functional feature as claimed herein. Therefore, Graham et al. cannot anticipate the invention as set forth in claims 25, 26, and 28. Applicants request revocation of the rejections to these claims.

The Office action further rejects claims 25 and 27 pursuant to 35 U.S.C. § 102 as anticipated by Lichtblau. Lichtblau discloses the manufacture of dual-sided planar circuits on a web by chemical spray etching. However, Lichtblau does not recognize the problem of over-etching and the effect it can have on the fidelity of the final etched structures and their actual effectiveness. Lichtblau also does not disclose the use of a dual-sided metallized web of equivalent thickness. In fact, the thinner metallization on one side of the web disclosed in Lichtblau is necessary to achieve the goals of creating a resonant tag circuit. (See col. 4, ll. 29-37.)

The novelty of the present invention is that in order to overcome a technical barrier (i.e., over-etching) that limits the thickness of the metal layer, the desired circuit has been essentially split in its own plane and the resultant two halves of the circuit are mounted on opposing sides of the substrate. The two halves of the circuit then work in complete unison with each other. Hence the overall circuit dynamics are fully equivalent to the originally desired, but practically unachievable circuit.

In contrast is the planar circuit disclosed by Lichtblau. That circuit required three elements: (1) a capacitance – the double-sided etching allows the two capacitor plates to be formed on opposite sides of the substrate holding different potentials with the substrate acting as the dielectric; (2) an inductor – the inductive coil needs to be on one side of the substrate only in order to establish a high enough self inductance; and (3) an acceptable Q-factor – the foil on one side must be thick enough to reduce the series resistance to a level that permits good detection capability, hence the thicker foil on one side of the substrate. None of the elements of the circuit disclosed in Lichtblau is a single functional circuit element where two halves of the circuit work in unison with each other on opposite sides of the substrate to function as a single equivalent circuit.

As one can see, Lichblau did not recognize he problems posed by over-etching when attempting to achieve a circuit design with greater thickness to width ratios. As with Graham et al., Lichtblau does not recognize or suggest creating a singular functional feature by etching a dual-sided metal web. Lichtblau does not disclose the application of a resist layer on each side of a web to form two patterns substantially defining first and second parts of the singular functional feature as claimed herein. Therefore, Lichtblau cannot anticipate the invention as set forth in claims 25 and 27. Applicants request revocation of the rejection to these claims.

Applicants note M.P.E.P. § 2116.01 provides: "Interpreting the claimed invention as a whole requires consideration of all claim limitations. Thus, proper claim construction

requires treating language in a process claim which recites the making or using of a nonobvious product as a material limitation. Motivation to make or use the nonobvious product must be present in the prior art for a 35 U.S.C. § 103 rejection to be sustained." Applicants realize that a § 103 rejection has not been asserted, but in view of the nature of the rejections in the present Offices action and the amendments presented herein clarifying the nature of the claimed invention, Applicants suggest this tenant of examination is appropriate to consider when evaluating the merits of the pending amended claims.

An information disclosure statement is submitted herewith. Applicants request the Office consider these additional references upon further review of this application.

Applicants believe the claims as presented herein are patentable over the references cited by the Office. Allowance of claims 25-31 presented herein is accordingly requested.

Respectfully submitted this 18th day of August 2003.

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